

REMARKS

The application is amended. The Title has been amended to correct a typographical error. As is apparent from the specification and claims, the invention involves Group VIA metal oxides. Accordingly, Applicants request amendment of this typographical error in the Title.

Claims 1-24 are currently pending in this application. Claims 16-24 have been withdrawn as being drawn to a non-elected invention. Claims 1 and 12 are amended herein. Additionally, new claims 25-27 have been added, drawn to molding compositions further comprising an anhydride hardener. Support for the new claims is provided in paragraph [0021] of the original application. Accordingly, no new matter is provided in the new claims. In view of the remarks below, reconsideration is requested.

Restriction Requirement:

The Action requires restriction under 35 U.S.C. §§121 and 372 as follows:

Group I: Claims 1-15, drawn to a coating composition; and

Group II: Claims 16-24, drawn to a method of coating.

Applicants hereby elect for further prosecution the invention of Group I including claims 1-15, with traverse.

The claims of Group II involve a method of coating, which method involves providing a coating composition including an epoxy resin, a melamine cyanurate, and a transition metal oxide containing an oxyanion of a Group VIA element. Clearly, a search directed to any such method would involve a search of the composition, which includes the same components as the composition of the Group I claims. Accordingly, there is no undue burden on the Examiner due to the common subject matter of the searches involved. Groups I and II should therefore be maintained in the present application.

In any event, Applicants respectfully request that Claims 23 and 24 be joined with Claims 1-15 in Group I. Claims 23 and 24 are not drawn to a method of coating an article, as stated in the Office Action, but are drawn to a method of imparting flame retardance to a molding composition. As such, Applicants submit that no additional search is required to determine patentability of these claims, beyond that required for Claims 1-15. Accordingly, these claims properly belong in Group I. Rejoinder is respectfully requested.

Applicants reserve their right to file at a later time a divisional application directed to the non-elected claims. Pursuant to 37 C.F.R. §1.48(b), there is no change in inventorship as a result of this election.

Claim Objections

Claims 1-15 stand objected to because of informalities. In particular, the Action asserts that Claims 1 and 12 claim a "molding composition substantially free of elemental halogen, phosphorus, and antimony". The Action points out that the specification, at paragraph [0028], discloses the use of triphenylphosphine, which contains phosphorus. Although the intent of the preamble is to exclude such materials in their elemental form, Applicants have nonetheless amended the preamble of Claims 1 and 12 to remove the term "phosphorus" to eliminate any unintentional ambiguity in the claims. Withdrawal of this objection is therefore respectfully requested.

Rejections Under 37 C.F.R. §103(a)

Claims 1, 2 and 4-15 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,660,811 to Ogura et al. ("Ogura"). Applicants respectfully traverse this rejection.

The present invention provides a composition particularly useful as a flame-retardant in molding composition for use in coating electronic or electrical devices. The composition includes an epoxy resin, melamine cyanurate, and a transition metal oxide containing an oxyanion of a Group VIA element.

As conceded in the Action, Ogura does not teach the use of a combination of compounds to impart flame retardance, and does not teach the specific combination recited in the present claims: a Group VIA metal oxide such as tungsten oxide and melamine cyanurate. Ogura merely presents a lengthy laundry list of suitable compounds which provide flame retardance, any one of which can be used in the compositions described therein. There is absolutely no suggestion in Ogura to use more than one compound for this purpose, nor any guidance as to particular combinations, out of the many compounds disclosed, which might provide an improved ability to impart flame retardance.

In contrast, the present invention claims the use of a combination of two specific flame retardants, a Group VIA metal oxide and melamine cyanurate, to impart

flame retardance in molding compositions. As noted in the application, this combination has surprisingly been found to provide a synergistic result, namely, a significant and unexpected improvement in flame retardance that is achieved through the combination of these components, as compared with the use of either compound individually.

For example, Example 1 of the present invention demonstrates a molding composition prepared with melamine cyanurate as a flame retardant (Sample 1). Example 2 demonstrates Samples 2-6, all of which include both melamine cyanurate and a Group VIA transition metal oxide, namely, tungsten trioxide. The results of flammability testing demonstrate a decreased total burn time for Samples 2-6 when compared with that of Sample 1, representing improved flammability.

In further support of this unexpected result, Applicants submit herewith the Declaration of Anthony Gallo, Ph.D, a named inventor on the present application. Dr. Gallo carried out experiments testing the flame retardant abilities of the compounds presently claimed in the molding compositions of the present invention. Data from these tests is presented in Table 1, attached in the Declaration. Molding compositions were made having a tungsten oxide alone (Sample B), melamine cyanurate alone (Sample C), and a combination of the two (Sample A). As can be seen in Table 1, the molding composition with the combination of compounds provided substantial flame retardance as compared to each compound used alone. This result could not have been predicted, based on the teaching of Ogura. Applicants respectfully submit that Claims 1-15 are not obvious in view of this reference, and request withdrawal of this basis of rejection.

Claim 3 stands rejected under 35 U.S.C. §103(a) as being obvious over Ogura in view of U.S. Patent No. 5,476,716 to Gallo et al. ("Gallo"). Applicants respectfully traverse this rejection.

Gallo is apparently cited for the teaching of a specific tungsten oxide, namely, tungsten trioxide. Gallo teaches a molding composition having a combination of a metal oxide and a halogen-containing organic compound for imparting flame retardance. As set forth above, the primary reference Ogura fails to teach a combination of compounds for providing flame retardance, nor the specific combination presently claimed, namely melamine cyanurate in combination with a Group VIA metal oxide. Gallo does not add anything to the deficiencies of these teachings, and therefore these references cannot be combined to arrive at the present invention. Applicants respectfully request withdrawal of this basis of rejection as well.

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Claims 23-24, currently withdrawn, are likewise patentable for the same reasons noted above. Ogura does not teach a method of imparting flame retardance in a molding composition through the use of a combination of compounds as set forth in these claims.

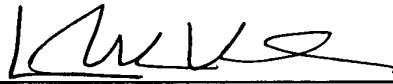
New Claims 25-27 are similarly patentable.

Based on the foregoing amendments and remarks, reconsideration of the rejections and allowance of all of the pending claims are therefore respectfully requested.

Should the Examiner wish to discuss any of these issues in further detail, the Examiner is invited to contact Applicants' undersigned representative by telephone at 412-471-8815.

Respectfully submitted,

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